

**Notice of Allowability**

Application No.

10/614,029

Examiner

An H. Do

Applicant(s)

KUBOTA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Response to Restriction Requirement filed on 10/26/04.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ The drawings filed on 08 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 10/08/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**Stephen D. Meier**  
Primary Examiner

**DETAILED ACTION**

***Election/Restrictions***

1. This application is in condition for allowance except for the presence of claims 12-14 drawn to an invention non-elected with traverse in the reply filed on 26 October 2004. Applicant is given ONE MONTH or THIRTY DAYS from the date of this letter, whichever is longer, to cancel the noted claims or take other appropriate action (37 CFR 1.144). Failure to take action during this period will be treated as authorization to cancel the noted claims by Examiner's Amendment and pass the case to issue. Extensions of time under 37 CFR 1.136(a) will not be permitted since this application will be passed to issue.

The prosecution of this case is closed except for consideration of the above matter.

**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

3. Authorization for this examiner's amendment was given in a telephone interview with Mr. Douglas Pinsky on 15 December 2004.

The application has been amended as follows:

-Please cancel claims 12-14 without prejudice.

In claim 1:

- Change "the main" in line 5 to --a main--.
- Insert --the-- before "liquid droplet" in line 10.
- Insert --the-- before "bubble" in line 19.

In claim 3:

- Change "are" in line 6 to --is--.

In claim 4:

- Change "are" in line 6 to --is--.

In claim 8:

- Change "droplet" in line 3 to --droplets--.

In claim 10:

- Insert --the-- before "bubble" in line 2.
- Insert --the-- before "liquid droplet" in line 4.

In claim 11:

- Change "palate" in line 2 to --plate--.
- Replace "said nozzle in the plural number" in line 3 with --plural nozzles--.
- Replace "said discharge energy generating element" in line 4 with --discharge energy generating elements--.

In the Abstract:

- Please rewrite the Abstract as follows:

A liquid discharge includes a first bubbling chamber, a second bubbling chamber arranged thereon, and a discharge port portion communicated with the

second bubbling chamber with a difference in level. The sidewalls of the second bubbling chamber contract in the direction toward the discharge port at an inclination of 10 to 45°. On the circumferential portion of the upper face of the first bubbling chamber in contact with an opening communicated with the second bubbling chamber, an extrusion is formed continuously to surround the opening, in the direction toward the main surface of the element base plate.

***Priority***

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

5. The information disclosure statement (IDS) submitted on 08 October 2003 was filed and is being considered by the examiner.

***Allowable Subject Matter***

6. Claims 1-11 are allowed.
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sugitani et al (US 4,611,219) and Torgerson et al (US 6,305,774) disclose a liquid jetting head having a plurality of rows of nozzles opposite to the discharge elements through a liquid passage divided into at least two groups.

***Reasons for Allowance***

8. The primary reason for the allowance of claims 1-11 is the inclusion of the limitations of a liquid discharge head that includes a sectional area of the upper face with respect to the central axis of said second bubbling chamber is smaller than a

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sectional area of the lower face with respect to the central axis of said second bubbling chamber, and the sectional area in the direction toward the central axis is continuously changed from the lower face to the upper face of said second bubbling chamber, and on the circumferential portion of the upper face of said first bubbling chamber in parallel with the main surface of said element base plate, and in contact with the opening communicated with said second bubbling chamber, an extrusion is formed continuously to surround said opening in the direction toward the main face of said element base plate. It is these limitations found in each of the claims, as they are claimed in the combination of, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143.

The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AD  
December 16, 2004



**Stephen D. Meier**  
**Primary Examiner**